DESCRIPTION

BACKGROUND OF INVENTION

[0001] Every year thousands of patients in the United States die from acute airway obstruction. Tens of thousands of others die or suffer significant morbidity from the after affects of improper suctioning early; including aspiration pneumonia, empyema, and Acute Respiratory Distress Syndrome (ARDS). Experience with currently available suction catheters shows their lumen sizes are inadequate to suction large amounts of foreign material [food, blood, mucus] In addition, adequate seals to preserve suction force in the distal trachea and bronchi are not maintained by currently available catheters. In addition, acute airway obstruction from mucous plugging causes significant morbidity and mortality in patients with asthma and chronic obstructive pulmonary disease in emergency department and intensive care unit (ICU) settings; these patients also have difficulty ventilating on and off ventilators and consequences of these obstructions are frequently lethal.

SUMMARY OF INVENTION

[0002] This invention is an ***orotracheal*** suction system which can be used in acute airway obstruction from foreign bodies, mucous plugging and for agressive suctioning of the oropharynx, trachea and bronchi after aspiration to prevent aspiration pneumonia, empyema, and ARDS.

BRIEF DESCRIPTION OF DRAWINGS

[0003] FIG. 1 below shows the system assembled with its key components.

ARGUMENTS

DETAILED DESCRIPTION

[0004] The invention is an Emergent ***Orotracheal*** Suction System that could be attached to wall suction and have these key components. (III in Fig.1) A reservoir, measuring 2000 cc 20 cm.times.10 cm.times.10 cm, which on one end is attached to wall suction with standard sump tubing (IV in Fig.1), and the other end is attached to our standardized extension tubing which measures 15French (Fr) in diameter. On the top of the 20 cm.times.10 cm surface of the reservoir, there is a 2 cm diameter tapering cylindrical or conically connector port which is centered at 5 cm and 5 cm from the edge. The exit is protected by a grid which measures 2 mm.times.2 mm over the opening which prevents obstruction of the vacuum by large particles. The reservoir would also be halved on the inside by a 4 mm.times.4 mm plastic grid, which would keep large particles preferentially on the entry side of the reservoir. On the bottom of the entry side is a 5 cm diameter removable disc to empty particle contents on the entry side and evacuate fluid from the entire reservoir, and to clean it. The opposite hole is a 15Fr diameter cylindrical or conically tapered connector which accepts the 15 Fr extension tubing via an adaptor which importantly keeps the entry to the reservoir 15Fr and is centered at 5 cm and 5 cm from the center edge of that side. The 15 Fr extension tubing (II in Fig.1) should measure 3 ft-5 ft to allow enough slack to reach a patient's head on the stretcher. The extension tubing can then be attached via a tapering cylindrical or conical connector port to the ***orotracheal*** suction catheters (I in Fig.1). Different adapters (V in Fig.1) would accompany each suction catheter size. One side of the adapter would always provide a seal to the 15 Fr extension tubing and the other side to the different size ***orotracheal*** suction catheters (The catheters could range in size in an adult system from 5Fr to 20Fr, in 0.5Fr increments. The pediatric catheters could range in size from 0.5Fr to 5Fr, in 0.5Fr increments). The said catheters work as so; they would be made of a high quality plastic polymer and have enough strength to withstand the pressure of the vacuum and flexibility to pass through. A catheter sized 0.5 Fr below the size of the endotracheal (ET) tube could be passed down the ET tube into the trachea. A proximal balloon port which would hook up to a 10 cc syringe would be on each suction catheter and could inflate a distal balloon on the catheter. The balloon would be 5 mm from the end of the catheter. This would create a good seal in the trachea for suction like an endotracheal tube creates for ventilation. If the food bolus is very proximal in the trachea our extension tubing could be attached directly to an ET tube with our adapters to suction into the reservoir. The key problems the system would solve is large enough extension tubing and suction catheters to allow adequate suctioning of larger and smaller food particles which were aspirated in the trachea or vomited into the mouth, or oropharynx. The other advantage of the catheters is there larger size and the distal seal they can create in the trachea. Standard sump tubing and other commercially available suction catheters frequently get clogged because their lumens are too narrow for large particles, or they are applying suction in the trachea with no good air seal. These commercially available tracheal catheters do not provide a good distal seal in the trachea to allow for proper suctioning of large and small aspirated particles.